

## *Analog Fire Weather Considerations for Whitewater Fire WIF 170123*

Location: OR-WIF | Date: July 30, 2017 | LTAN: Trevor Miller ([trevormiller@fs.fed.us](mailto:trevormiller@fs.fed.us))/Josh O'Connor ([josh\\_oconnor@fws.gov](mailto:josh_oconnor@fws.gov))

**In light of the developing short range forecast (see below), we analyzed further** fire growth days in relation to weather and fire danger indices on Scott Mtn Fire (2010) and Puzzle Fire (2006). Temperature and minimum relative humidity (RH) were found to be consistent predictors. Easterly wind events also appear to directly correlate with large fire movement, however forecasts do not indicate the setting up of a pattern typical of a strong East wind event.

335 PM PDT Sun Jul 30 2017

Concerns begin on Monday as temperatures start to rise and humidities drop into the 20s by early afternoon. In addition, Haines 6 conditions move into the Oregon Cascades Monday afternoon.

The most extreme dry and unstable conditions are expected on Wednesday and Thursday as the thermal trough sets up somewhere between the Coast Range and Cascades. High temperatures in the valley will shatter daily records, and will be approaching all time records. *There won't be much relief from the heat at higher elevations with temperatures between 4000 and 5000 feet along the Cascade crests rising well into the 90s and even approaching 100 degrees. In addition to the extreme heat during the day, a thermal belt will lead to poor overnight recoveries in areas between 2000 and 4000 feet in the Coast Range and Cascades. These locations will likely remain in the 70s at night with some areas struggling to drop below 80.*

*Although it will be hot, dry, and unstable, there is not much offshore flow with this event. There will be some light easterly flow (~5 mph) in the Cascades and Cascade foothills at times, but stronger widespread easterly flow does not appear likely in this pattern.*

Review of analog fires in close proximity and associated growth days are aligned with the near term forecast.

**Moderate to Large Growth Days:** (500-1,500 acres; fires were relatively small on these days but made large runs relative to size with extreme fire behavior; runs of about 1 mile)

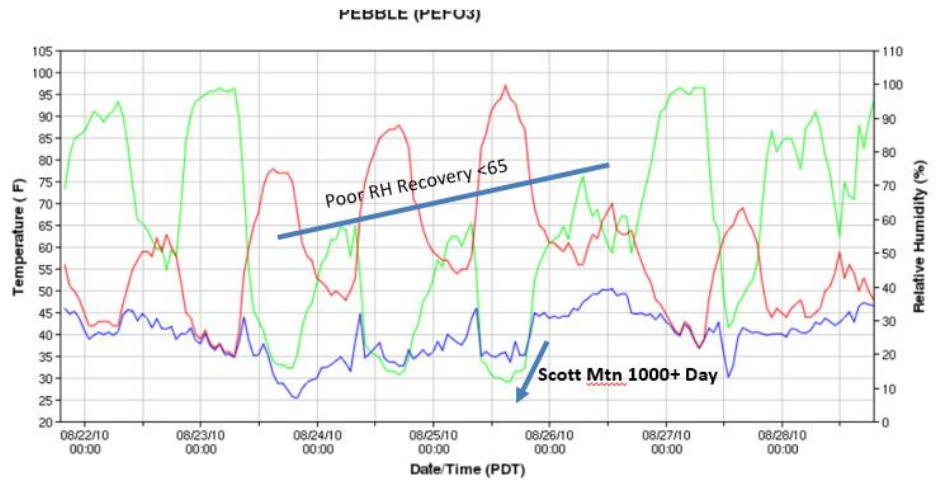
**Growth Indicators:** Minimum RH <23, RH recovery <65 and Maximum Temperature >84 (usually between the 90th and 97th percentile ERC)

**Large-Extreme Growth Days** (> 1,000 acres growth; fires made runs between 2 and 3 miles and were plume dominated)

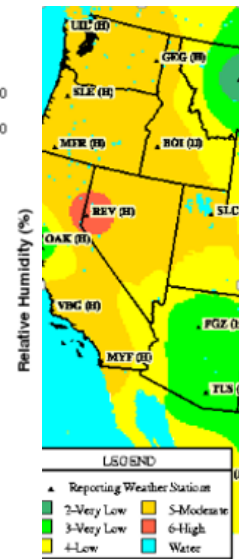
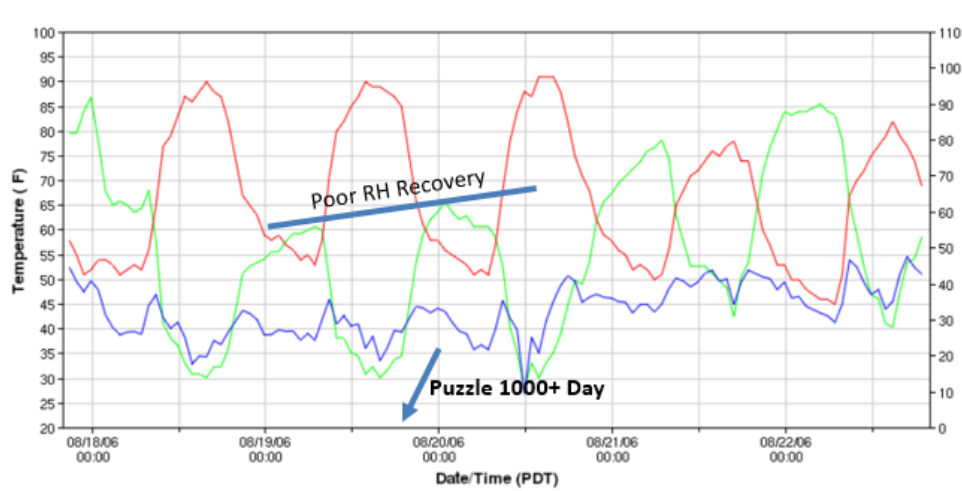
**Growth Indicators:** Minimum RH <13, RH recovery <65 and Maximum Temperature >91 (generally at or above the 97th percentile ERC)

The Haines Index – watch for high Haines Index days (5&6).

Both the Puzzle fire and Scott Mountain fires had considerable growth during thermal trough passages (and associated Haines) under the conditions highlighted above. Forecasted Temperatures, RH, and instability are well aligned on the Whitewater Fire as are current ERCs and fuel moistures. While earlier in the season than both Puzzle and Scott, current conditions and forecasted weather **suggest potential for growth not yet seen on the Whitewater Fire.**



Scott Mtn trace RAWS 8/22/10-8/28/10 and Haines 5 (8/25/2010)



Puzzle Fire trace RAWS 8/18/06-8/22/06 and Haines 5 (8/19/2006)